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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,683	06/21/2006	Stefan Zimmermann	Q90798	3798
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EXAMINER				
RIPA, BRYAN D				
ART UNIT		PAPER NUMBER		
1723				
NOTIFICATION DATE		DELIVERY MODE		
03/10/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/552,683

**Applicant(s)**

ZIMMERMANN, STEFAN

**Examiner**

BRYAN D. RIPA

**Art Unit**

1723

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 5 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5 and 19-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/11/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

In response to the amendment received on January 5, 2011:

- claims 1, 2, 5, 19-24 are presently pending
- the objections to claims 3 and 4 are **withdrawn** in light of the amendments to the claims
- the rejection of claim 5 under 35 U.S.C. 112, second paragraph, is **withdrawn** in light of the amendments to the claims
- all prior art rejections are **withdrawn** in light of the amendments to the claims
- new grounds of rejection are presented below

### ***Information Disclosure Statement***

1. The Examiner apologizes for having overlooked the citation to the FR 2327191 in the International Search Report of October 18, 2004. As discussed in the MPEP, the submission of the English copy of the PCT search report meets the requirements for a concise explanation (see MPEP 609.04(a)(III)). As a result, the Examiner has considered the reference FR 2327191 and has indicated as much on the included IDS dated Oct. 11, 2005.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 5 and 21-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al., (WIPO Pub. No. 2001/87364 A1), with reference to English equivalent (U.S. Pub. No. 2003/0072675) (hereinafter referred to as "TAKEDA") in view of Bunn, (U.S. Pat. No. 3,933,614) (hereinafter referred to as "BUNN") and Slipiec et al., (U.S. Pat. No. 3,967,131) (hereinafter referred to as "SLPIEC").

Regarding claims 1, 2 and 5, TAKEDA teaches a discharge tube comprising an insulator tube with an inner and outer face (see glass tube 203 having an inner and outer face), an inner electrode which is in contact with the inner face (see inner electrode 204 in contact with the inner surface of glass tube 203), an outer electrode which is in contact with the outer face (see outer electrode 205 in contact with the outer surface of glass tube 203), and a contact element in electrical contact with the outer electrode (at the end of lead 10). See figure 9.

TAKEDA, however, does not explicitly teach: (1) the contact element being in electrical contact for at least along the greatest part of the length of the outer electrode; and (2) the outer electrode, at a radial distance from the insulator tube, forms a guiding element in which the contact element is received.

However, BUNN teaches the contact element for a mesh electrode being in electrical contact over and extending along the entire length of the electrode (see electrode connectors 42 and 43 in figure 1; col. 2 lines 34-46).

Consequently, as shown by BUNN, a person of ordinary skill in the art would accordingly have recognized the use of an electrical contact element for a mesh electrode extending across the entire length of the electrode to facilitate the making of an effective electrical connection.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395-97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to extend the length of the electrical contact of TAKEDA across the entire length of the electrode as shown in BUNN to obtain the predictable result of having the contact element as claimed.

Furthermore, TAKEDA as modified by BUNN teaches the outer electrode at a radial distance from the insulator tube, but electrically connected on the outside of the wire mesh element forming the outer electrode (see figure 9 from TAKEDA) such that a guiding element is not formed as claimed.

However, SLIPIEC teaches the connector to a wire mesh outer electrode being on the inside of the element forming the outer electrode, thereby having a raised portion, i.e. a guiding element which could be considered a channel, in which the contact element is received which is at a radial distance from the insulator tube (see

figure 1 and rigid terminal bar 39 as well as connector leads 25 which are electrically connected to their respective mesh electrode by having the contact element, i.e. a wire, sandwiched by the wire mesh forming the electrode).

Consequently, as shown by SLPIEC, a person of ordinary skill in the art would accordingly have recognized that the electrical contact element can be placed underneath the wire mesh electrode, i.e. to have the wire mesh electrode formed around the contact element, to facilitate the formation of an electrically connection.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have the electrical connection formed by a contact element formed underneath the mesh electrode as taught by SLPIEC instead of having the electrical connection formed on the outside of the wire mesh electrode as taught by TAKEDA to obtain the predictable result of having the outer electrode forming a guiding element in which the contact element is received as claimed.

Please note, regarding the interpretation of claim 5 the examiner is treating the limitation reciting “wherein the contact element is inserted into the guiding element” to be a product-by-process claim limitation since it recites the manner in which the device is assembled. The patentability of a product or apparatus does not depend on its method of production or formation. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even

though the prior product was made by a different process (see MPEP § 2113). As a result, the examiner is interpreting claim 5 to require only the structural limitations recited in the claim, namely that the guiding element be in the form of a channel and the contract element be in the form of a wire.

Regarding claim 21, TAKEDA teaches the discharge tube wherein the outer electrode is produced from a radially expandable woven wire fabric or braided wire fabric in the shape of a hose (see ¶188 teaching the use of wire hose-shaped meshes, which would be radially expandable, produced by plain-weaving wire for use in forming the outer electrode).

Regarding claim 22, TAKEDA teaches the discharge tube wherein the insulator tube is made of borosilicate glass (see ¶188 teaching the use of Pyrex, i.e. borosilicate glass, as the preferable material for the glass tube, i.e. insulator tube).

Regarding claim 23, TAKEDA teaches the discharge tube wherein the insulator tube at a first longitudinal end comprises a base, which is produced so as to be integral with the insulator tube and that the insulator tube at a second longitudinal end comprises an aperture (see figure 9 showing one end of glass tube 203 integrally formed with stopping member 7, i.e. a base, and the other end of glass tube 203 having an aperture).

3. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKEDA in view of BUNN and SLPIEC as applied to claim 1 above, and further in view of Hutter (U.S. Pat. No. 4,101,783) (hereinafter referred to as "HUTTER").

Regarding claims 19 and 20, TAKEDA does not teach the inner electrode being produced from a flexible laminar material with a spring element with at least one metal wire which is in contact with the inner electrode and provides tension to keep the inner electrode against the inner face of the insulator tube.

However, HUTTER teaches a discharge tube where the inner electrode is produced from a flexible laminar material (see col. 5 lines 29-30 teaching the inner electrode being a thin metallic foil) having a spring element with at least one metal wire which is in contact with the inner electrode and loads the inner electrode against the inner face along a part of the length of the inner electrode (see figure 5; col. 5 lines 29-43).

Furthermore, HUTTER teaches the spring element being a helical spring wherein the outer diameter of the helical spring in the non-mounted condition is greater than the inner diameter of the inner electrode mounted in the insulator tube (see figure 5; col. 5 lines 29-43 teaching the spring element being a helical spring which would bias the inner electrode against the inner face of the dielectric tube thus requiring the outer diameter of the spring to be greater than the inner diameter of the inner electrode).

HUTTER teaches this inner electrode configuration to prevent the formation of air gaps between the inner electrode and the inner face of the insulator or dielectric tube



which can result in undesirable discharges and ultimately damage the insulator or dielectric layer (see col. 5 lines 38-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the inner electrode configuration of TAKEDA with the inner electrode configuration of HUTTER to provide for the elimination of air gaps between the inner electrode and the inner face of the insulator tube.

4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over TAKEDA as modified by BUNN and SLPIEC as applied to claims 1 and 23 above, and further in view of Blanchard, (U.S. Pat. No. 3,530,058) (hereinafter referred to as "BLANCHARD").

Regarding claim 24, TAKEDA as modified by BUNN and SLPIEC fails to teach the insulator tube being tapered towards the aperture along a part of its length.

However, BLANCHARD teaches an insulator tube along a part of its length being tapered toward an aperture (see corrugated end 3b of glass tube 2a in figure 1 which is tapered towards the aperture at several points).

Consequently, as shown by BLANCHARD, a person of ordinary skill in the art would accordingly have recognized the use of a tapered insulator tube.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395-97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the untapered insulating tube of TAKEDA with the tapered tube of BLANCHARD.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 2, 5 and 19-24 have been considered but are moot in view of the new ground(s) of rejection.

However, because the same references have been reapplied in the new grounds of rejection, the Examiner will address Applicant's arguments that are relevant below.

Applicant argues that:

*"... if according to the invention, the contact element is located a radial distance from the insulator tube and, therefore, also at a greater distance to the inner electrode than the outer electrode, a homogeneous discharge between the outer electrode and the inner electrode is achieved. This is not taught or suggested by any of the cited prior art documents."* See Remarks at page 7 first full paragraph.

The Examiner readily acknowledges that the cited prior art, i.e. TAKEDA as modified by BUNN and SLPIEC, does not teach the contact element located at a radial distance from the insulator tube and, therefore, also at a greater distance to the inner electrode than the outer electrode. However, to the extent the Applicant is asserting that this argument comports with the scope of the claim as presently drafted the Examiner respectfully disagrees.

As presently drafted, the claim requires "the outer electrode, at a radial distance from the insulator tube, forms a guiding element in which the contact element is received." (see claim 1, last two lines). As such, the claim does not require the contact element to be at a radial distance from the insulator tube as argued, but instead only requires the outer electrode a part of which forms the guiding element to be at a radial distance from the insulator tube.

As set forth in the rejection grounds above, the Examiner is of the opinion that the guiding element, as set forth in the rejection grounds, i.e. the raised portion of the outer electrode of SLPIEC, could be reasonably said to be at a radial distance from the insulator tube thereby reading on the claim. However, as shown by SLPIEC, such a configuration does not inherently require "the contact element to be located at a radial distance from the insulator tube and also at a greater distance to the inner electrode than the outer electrode" as argued.

As a result, for the reasons mentioned the Examiner is still of the opinion that the prior art can be reasonably said to read on the claim limitations as presently set forth. However, were the claims to be amended so as to be commensurate with the scope of the argument as discussed above, the Examiner would feel such a limitation would obviate the grounds of rejection as set forth herein and necessitate a further search of the prior art.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN D. RIPA whose telephone number is 571-270-7875. The examiner can normally be reached on Monday to Friday, 9:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/  
Primary Examiner, Art Unit 1723

/B. D. R./  
Examiner, Art Unit 1723